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Clinical Proceedings

OF THE CHILDREN'S HOSPITAL

WASHINGTON, D. C.

THE MENTAL HEALTH ROLE OF THE HEALTH SERVICES IN THE PROBLEM OF JUVENILE DELINQUENCY *Reginald S. Lourie, M.D.* 191

CURRENT STATUS OF ANTIBIOTIC THERAPY IN SHIGELLA AND SALMONELLA ENTERITIS *Sydney Ross, M.D.* .. 198

CLINICOPATHOLOGICAL CONFERENCE E. CLARENCE RICE, M.D., GRACE H. GUIN, M.D., ENID F. GILBERT, M.D., AND GEORGE J. COHEN, M.D. 202

BOOK REVIEWS 207

EDITORIAL

GENETIC COUNSELING BY THE PEDIATRICIAN 207

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THE MENTAL HEALTH ROLE OF THE HEALTH SERVICES IN THE PROBLEM OF JUVENILE DELINQUENCY

Reginald S. Lourie, M.D.*

It is generally agreed that what this country needs is a good common sense solution to the problem of juvenile delinquency. However, this is being tried every day in almost every community while the incidence of juvenile delinquency changes little. As people working with the health problems of the population we have been asked to be here because there are some very good reasons why *our* common sense would seem to have a better chance of working, especially when added to that supplied by our legal, law enforcement, welfare, sociological, educational, and law-making colleagues. There is a body of information available to us, particularly about the structure of the brain and personality and the interaction between body, mind and environment that would make not only our common sense approaches to delinquency more logical and helpful, but also those of our confreres. It reminds me of a doctor who worked out the chemical structure of the protective capsule of the tubercle bacillus. He then, using good common sense, figured out a theoretical chemical that should dissolve it, so that the bacillus itself would be vulnerable to the antibiotic and immunological approaches. He found that such a chemical could be made and sure enough it did dissolve the fatty capsule. He was given grants and wards of patients, but nothing therapeutic happened. He had not taken into consideration what went on inside the individual patient to modify the compound which his common sense had evolved. We can, to at least some extent avoid such mistakes if we take into consideration that our experience shows that in the first 5 or 6 years of life the basic elements of personality are established. We also are aware of many of the elements that can go wrong and distort the resultant personality.

If we are to think of ways to apply this information on mental makeup to dealings with disturbed children who act out their personality distortions in relation to the environment, it would seem that one of our prime considerations must be about how it can be made an integral part of the armamentarium of all people trained in health work. Otherwise, when we try to deal with delinquency it is like bringing a car to a garage because it does not run right and having the repair people clean the windshield, straighten the fenders, fix the tires, but never lift the hood because they have never been trained to know what is under it and what they can do

* From a talk given at the Children's Bureau Conference on Health Services and Delinquency, May 1955.

with it for even minor or emergency repairs. Thus we need to bring not only into schools of medicine and education, but also into schools of nursing, and health education, and into the training courses in the technical aspects of health services, teaching about personality growth and development, the principles of interviewing and the basic principles involved in therapeutic approaches to dealing with people's problems, as well as knowledge of community resources and how to use them.

This idea has been thought of as heresy in some circles, particularly where it has been interpreted as creating a tremendous uncontrolled army of therapists. There are those who will put such an emphasis on this spreading of information, but the fact remains that it is not directly to the specialized services in mental health that most people in trouble turn, but rather it is to the rank and file of those dealing with the people's health in general. It has been asked, have these unspecialized workers any right to deal with these troubles? This is an academic question, because, even if we leave out the fact of the comparative dearth of specialized services in most areas, the health workers are dealing with people's troubles all the time. They are forced into this position by the troubled people themselves. In dealing with the child already in trouble we are asked (not often enough at some times and places) by courts, schools, institutions, and agencies, to participate in their care and disposition. We would, then, by providing better training about what goes into normal and abnormal mental functioning, be providing a sounder kind of help with these problems of individuals and families. It is of great value to have an army, first of all of case finders, second, of people able to deal with the large numbers of problems that they are qualified to handle, third, of people who can provide emergency assistance and/or consultation for the more serious difficulties, and fourth, knowledgeable people who would be in a position to apply preventive techniques.

You will be considering all these areas in your deliberations, but I think each of them deserves some preliminary comment. First of all, about *case finding*. Our health workers in whatever branch of this work are in a position to see problems that might otherwise be overlooked. When a person lets down part of his defensive armor or front to the world with those who care for his physical difficulties (and taking off clothes is the first step in this as Levy has pointed out) it becomes easier and even natural to talk about other difficulties. Here is where it becomes important to know what it is that we see. If we as health workers know how emotional difficulties are rooted in unsolved phases of personality development and how handicaps and brain damage influence the solving of fundamental problems of relationships and obtaining satisfactions from living, then it is possible very logically for us to explore these areas of functioning as

part of the other health services we offer; otherwise these problems in living might never be explored until an individual gets into trouble in the community and forces the community to do something about what we as health workers may have neglected. It very often takes only a question about adjustment in school, or to siblings, or to parents, or to social life, directed either to the parent or the child or both, to open doors that people do not know could be opened. Such questions are often responded to with an attitude of "I did not know you cared". On the other hand the attitude of "It is not any of your business" may be encountered, or "There is not any trouble at all" may be forthcoming when very evidently there is trouble. It is at such a point that the health worker needs not to feel helpless or frustrated. With interviewing skills at his command, he can keep the situation open instead of having the door closed in his face. He needs to know something of personality structure and interpersonal communication so that he can be helpful, not just to the person or family asking for help and able to follow through on getting it, but also to those who do not see the need for help or who ask for it, but then can not accept it. He needs to know enough to recognize when people are unrelated, unsure, frightened, disorganized and antisocial, and how these patterns either in the adults or children affect those about them as well as themselves. He needs to know about those who function by the predominant use of denial, or by the use of passing the blame onto others, or by withdrawing and avoiding, or by feeling so guilty that they must over-protect or neglect in order to relieve their guilt. He needs to know how to keep from getting involved personally with the people he is trying to help, if he is to keep from jumping into the family or personal problems with them, or not to feel hurt personally or rebuffed by a rejection of interest or help that is offered. He needs to know his patients' reaction to emotional problems. After all, how many people ask for or accept an appointment with the dentist with the first twinge of pain in a tooth and how many appointments are broken by patients whose pain has temporarily been relieved. If the dentist closed his doors to all such people he would have little business. He finds that often the pain has to get worse before anything can be done to help it get better. At that point he must be available to deal with it, sometimes on an emergency basis. Therefore, in whatever setting the health services are offered, whether it is the clinic, the office, the hospital, the school, the home, we need to keep our eyes and ears open (and might have to open our mouths too before we are through) if we are to spot the kinds of difficulties that could lead to disturbed behavior. We do not have enough knowledge at this point to be able to predict always when emotional disturbance will end in acting out or overt delinquent behavior, so that we need to think of dealing with any and all forms of

disturbance in behavior and adjustment if we are to think of doing something about spotting the potential or early delinquent in our own work.

Let us consider the next two points together; the *provision of services* to those we should be able to help and the question of *emergency services* for those who need more continuous and definitive help. To understand better what the role of the health worker can be in these areas, possibly we should take a look at the sources of problems in children. A good working etiological classification (though by no means complete) finds problems related to:

1. Faulty training;
2. Surface conflicts (such as with parents, siblings, social, learning and sexual aspects of functioning);
3. Deep conflicts (neuroses);
4. Physical difficulties (including handicaps, brain damage, metabolic disturbances and poorly handled convalescence);
5. Mental difficulties (including psychoses and mental deficiency).

It has been found that the first two groups make up 80 per cent of all the problems children present. In other words, for the vast majority of children's problems there is no need for the mental hygiene clinic team's approaches or definitive psychiatric care. It would appear that in four-fifths of all the emotional disturbances we will encounter, the roots are shallow and it does not take too much to dig them out. The first requirement in these cases, however, is to spot the etiology of the problem, since the symptoms themselves, as you know, are relatively non-specific and mean different things to different individuals. Again, we need to have as a frame of reference our body of information on normal personality development and knowledge of where and how the snags in it develop. Then by asking and looking, common sense answers as to the corrective procedures needed are often available. This approach is available to the general practitioner, the pediatrician, the clinic, the hospital, and school nurse as well as to many others. In other words if we lift the hood of the car we find there are many things that we could be competent to handle short of opening the more complicated parts such as the carburetor or the engine itself. Sometimes, however, it is hard to tell just from the symptoms themselves in which of the first three categories the difficulty lies. Sometimes it is necessary to try the superficial corrective approaches first in order to know whether more definitive engine opening techniques available to the specialists are necessary. Contrary to the opinion of many, we (most often) will not be harming the individual with our enlightened efforts if the difficulties are too deep rooted to be reached by topical applications of our knowledge. We usually have a better chance of being right than the neighbors, grandma, mother-in-law and the storekeeper who may have given advice which has not worked.

When we consider our role in the acute flare-ups in our clinical contacts with families, we are faced with many practical difficulties. The easiest way out is to make a referral, but I am sure you have tried calling a mental hygiene clinic to get assistance with an emergency. Usually the answer is that this is the third emergency call today, and the waiting list is six months long; or, there could be an intake interview next week. (This, I can assure you is equally as frustrating to the clinic, hampered as it is by the black market conditions on personnel and the long-term nature of its work.) The family, however, needs help right now with the child who is running away, setting fires, or is caught in an antisocial activity that has aroused the neighborhood, school and, we hope, the parents into a need for action. The anxiety engendered at such times is acute, and it is often in the presence of anxiety with its changes in homeostatic balance of individuals that people find it possible to accept help or to change. We might consider here the lessons learned in combat areas in the last two wars. For example, when a soldier became acutely anxious or disturbed on the front lines in Korea, if he were interviewed right behind the lines, allowed to sound off about such things as his fears, worries, and all the injustices past and present to which he had been exposed, and he was then reassured, rested, reassigned, and an awareness created about his needs and about the things he could profitably avoid, he got back to the front lines as a participating soldier in most instances. However, if he were sent back from the front to field hospital, to base hospital, and eventually to the general hospital, the chance of getting him to function as a useful soldier became slimmer and slimmer. In other words, in our patients, it it is when the pain is acute that we can often be of greatest assistance, particularly in keeping a family or an individual from withdrawing further, becoming more hostile and vengeful, accepting new ways of functioning with others, reacting with more fright or disorganization.

What can we validly do at such times? There has come to exist an attitude that the only valid approaches are those of the psychiatric clinic and that their techniques are sacrosanct. However, as we look over the evolution of our philosophies of treatment, we see that they have gone through a number of phases, starting with doing something about children in trouble, going on to doing something for them, and finally the emphasis came to be on doing something directly with them. It would seem to be that there are still plenty of things that can be done about and for a family in acute trouble. Environmental deficiencies can be modified, deprivations corrected, trust established or re-established, and resentments aired. Community resources can be mobilized. There are levels of working with patients that can be therapeutic at the same time that they are not profound involvements. The basic element in most forms of therapy is the relationship between patient and therapist, and the resultant

corrective emotional experience can be an integral part of the emergency services we offer. Is it not like dealing with a very painful, pointing abscess and making an adequate incision that allows the pus to erupt and drain or, if there has been a spontaneous rupture, making sure that it does not wall over again and remain a constant irritant? At the same time, we can look for the kind of longer term assistance that can provide more direct working with the family members. Maybe the analogy to a surgical emergency is not a good one because the surgical emergency is measured in terms of hours while these situational and interpersonal crises can be thought of as involving days and weeks, and our mistakes are not so costly. They come back to us. This may be a little exaggerated. We always will encounter families who refuse help, even for abscesses. Here, we need to re-evaluate our philosophy of waiting for patients to come to us, when the pathology involves the community. New concepts of case work, such as aggressive, foot-in-door, case work are evolving in practice. Also, if a family can not be reached, if we can find one individual in it to be worked with, it is often worthwhile. It has been surprising to us to learn from the children we have been able to help, how much tolerance they have for those around them. That such emergency measures can be effectively used on a large scale has been demonstrated by Dr. Gerald Kaplan's report on such services in Israel.

We need to reassess our skills and knowledge to see how the available personnel can fit into the provisions of such services. The greatest obstacles we find to providing this type of on-the-spot help in crises are the health workers themselves. They may be too busy, or afraid to use "psychiatric" techniques, or may be people who can not listen but have to tell people what to do, or may be people who find it hard to relate personally to others. The greatest obstacle, however, is in those workers who do not believe in mental mechanisms, or merely give lip service to body-mind concepts.

There is always the perennial question about time to fit such procedures into full daily schedules. It is true that we can not take a half hour or an hour to listen and ask questions and think through the evidence we collect, especially if we know that our waiting rooms are becoming a bedlam and no one will get to lunch or make outside calls on time. This can not be done in a routine 15 or 20 minute office or clinic visit. However there have been numerous ways worked out to have a more concentrated block of time available, such as an hour a week set aside which turns out to be useful in taking up not only more concentrated considerations of emotional problems, but also other health problems that require more time. This can actually be a time saver, if you add up the accomplishments of a number of inadequate 15 minute visits devoted over a year to

a stubborn habit problem and match them with what more can be learned in a single more prolonged session.

The idea that possibly personality distortions could be prevented goes back in this country to the pioneers in American psychiatry. With each new step forward in our knowledge there has been the hope that here was a new *method of prevention*. With each failure in such applications of our knowledge, there has been a wave of pessimism about the possibility and effectiveness of such approaches. We are currently in a phase of optimism because our current insights into mental functioning are proving more and more valid and seem applicable to spotting the kinds of parent-child interaction that are known to lead to distortions in personality development. This logically would start with the attitude of the pregnant mother toward her unborn baby. Then, there are all kinds of people in the world, and most of them have children. We need to be aware of the psychopathic, psychotic, immature, and unrealistic parents, as well as those with errant attitudes about feeding, affection, cleanliness, and constipation. Thus what is sometimes euphemistically called anticipatory guidance needs to be concerned not only with the forms and practices that are applied to the rearing of children, but also the feelings involved. We have to train our health personnel to listen not only to the words but also to the music of what goes on in the families they deal with. It is not enough to provide intellectual approaches to the expected crises that stages of personality development bring. For example, we have found out a great deal about what can go wrong in the feeding processes. As a result, in many cases, well baby clinics are reporting many fewer of the formerly prevalent feeding problems. However, they report many more sleeping problems. We have found that changing the forms of toilet training from the early rigid patterns to more relaxed, more logically timed approaches has not changed the incidence of anal character traits. The more subtle indentifications with parental personality attitudes can not be influenced by simply changing outward forms. The normal fears, such as those of separation and bodily hurt, will be difficult for a child to deal with if they create corresponding responses or cause anxiety in the parent. Thus we need to know, where possible, something about the parents to whom we are giving advice. There is too much tendency to deal with situations as stereotypes when we need to take into account individual constitutional factors, organic elements and the environment if we are to understand all that goes into an adequate preventive program. For this we need to turn to our training schools and think of teaching procedures and supervision calculated to provide awareness of self and others, such as has been demonstrated as feasible in schools of social work and is creeping into medical schools, and training of public health nurses. In all this we might well

look into the values of our educational approaches to provide corrective measures, that is, what is accomplished by the various degrees and kinds of "brain-washing". An element that is often overlooked in preventive practice is the importance of continuity. This means follow-ups by the health personnel, not only from the pre-natal through the pre-school years, but into grammar and high school levels. The sharing of information by health workers with welfare, school, and law enforcement agencies is also a factor in allowing these agencies to proceed in an enlightened way with children in trouble.

While the emphasis today has been on spreading the information we now have, I would like to close on the note of needing to know more. This relates particularly to knowing more about what happens to the developing ego and especially about how it deals with the aggressive drives, which is in long range terms, one of the nuclear problems in understanding and dealing with juvenile delinquency.

CURRENT STATUS OF ANTIBIOTIC THERAPY IN SHIGELLA AND SALMONELLA ENTERITIS

Sydney Ross, M.D.

SHIGELLA ENTERITIS

The in vitro bacteriostatic effect of sulfonamides against organisms of the genus *Shigella* together with the clinical efficacy of the drug in this disease has been amply demonstrated. The soluble, easily absorbed sulfonamides such as sulfadiazine have been shown to be superior to the enteric preparations such as succinylsulfathiazole (sulfasoxidine) and sulfaguanidine. However, the limiting factors in the routine use of sulfadiazine in shigellosis include: (1) The appearance of sulfonamide-resistant strains of *Shigella* organisms; (2) The fact that occasional patients have a sensitivity to sulfonamides; and (3) The possible hazard of administering sulfadiazine to dehydrated patients in the tropical areas where the disease has its greatest endemic concentration.

In the summer of 1947 a diarrhea ward was set up at Children's Hospital, Washington, D. C., for the express purpose of evaluating antibiotics in the treatment of both specific and non-specific enteritis in the pediatric age group. All patients admitted to the hospital with the complaint of diarrhea were admitted directly to this ward. Three consecutive daily stool cultures were obtained on all patients and, in those cases in which

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the *Shigella* organism was isolated, antibiotic therapy was started without delay. During the seven year interval between July 1947, and July 1954, a total of 304 cases of *Shigella* enteritis have been treated under this program. All the antibiotics including streptomycin, polymyxin B, chlortetracycline, oxytetracycline, tetracycline and chloramphenicol were evaluated. Of this number, 16 patients were treated with polymyxin B, 34 with oral streptomycin, 46 with chlortetracycline, 39 with oxytetracycline, 26 with tetracycline and 133 with chloramphenicol. For purposes of comparison, 20 additional patients with bacillary dysentery were treated with sulfadiazine.

Materials and Methods

Therapy was initiated promptly after a positive stool culture was obtained. During treatment, stool cultures were obtained daily until the patients were discharged from the hospital. The mediums used included *Salmonella-Shigella* (SS) agar and tetrathionate broth. The rectal swab technic was employed routinely and all stools were seeded simultaneously on these two media. Over 2,400 stool cultures were obtained in this series (an average of 8 per patient). It may be well to point out that the *Salmonella-Shigella* (SS) agar proved to be the most sensitive medium in the isolation of *Shigella*, while Kauffman's tetrathionate broth was the least useful. On the other hand, for the isolation of *Salmonella* from stools, tetrathionate broth was considerably more effective in our experience than any other medium employed.

In the present series the patients ranged in age from 2 months to 12 years. Except for the use of different antibiotics, the treatment of all patients was the same.

Dosage and Duration of Therapy

The duration of treatment ranged from 4 to 12 days with an average of 7.3 days per patient. There were only minor variations in the duration of therapy for the several antibiotics.

The dose of the tetracyclines ranged from 10 mg. to 20 mg. per Kg., and chloramphenicol 50 mg. per Kg. of body weight per 24 hours, in a 4 to 6 hour divided dosage schedule. Oral streptomycin was given in a dose of 200 mg. to 400 mg. every 4 hours orally. No antibiotic was given parenterally in this series.

All drugs in the present series were generally well tolerated and only minor side reactions were observed. Vomiting and diarrhea occurred occasionally during the administration of broad-spectrum antibiotics, particularly chlortetracycline and oxytetracycline. Similarly, some degree of vulvo-vaginitis was observed in an occasional female patient; this usually

cleared up shortly after discontinuation of the broad-spectrum antibiotic drug. In this series no untoward effects were observed after oral administration of streptomycin and polymyxin B, both of which show little if any absorption from the intestinal tract. No depression of the formed elements of the blood was observed following administration of the broad-spectrum antibiotics, including chloramphenicol.

RESULTS

In all patients in this series a rapid disappearance of the *Shigella* organism from the stool occurred shortly after therapy was started. Daily stool cultures made during the course of therapy disclosed that the *Shigella* organism usually disappeared from 1 to 4 days after the start of treatment. The Sonnei strains appeared to respond as promptly as the Flexner organisms. Assuming the rapidity of disappearance of the pathogen from the stool to be a therapeutic index of the effectiveness of each drug, we found that all 6 drugs produced a prompt disappearance of the *Shigella* organism after initiation of therapy (Table I). The average interval for chloramphenicol therapy was 1.3 days; for chlortetracycline, 1.6 days; for oxytetracycline, 1.4 days; for tetracycline, 1.2 days; for oral streptomycin, 1.6 days; for oral polymyxin B, 1.9 days; and for sulfadiazine, 2.0 days. This slight variation was not considered statistically significant.

The clinical subsidence of the disease was commensurate with the favorable effect observed bacteriologically.

After drug administration was started in the acute cases with fever, pronounced drowsiness and frequent diarrheal stools (many of which contained blood and mucus), the patients usually manifested considerable clinical improvement characterized by a rapid decrease of temperature, prompt reduction in the number of stools (usually within 1 to 3 days) and disappearance of blood and mucus from the feces. Because the diar-

TABLE I

Drug	No. Cases	Negative Stool Culture (av. days)
Sulfadiazine	20	2.0
Polymyxin B (oral)	16	1.9
Streptomycin (oral)	34	1.6
Chloramphenicol	133	1.3
Oxytetracycline	39	1.4
Chlortetracycline	46	1.6
Tetracycline	26	1.2
Total	304	

rhea was checked rapidly with antibiotic therapy, extensive adjuvant parenteral therapy was required in only a few cases, particularly among the infant group. Uneventful recovery followed in all cases in the present series. In those cases where adequate follow-up stool cultures were obtained following discharge from the hospital, a recurrence of positive stool cultures was noted in 7 per cent, within 1 month or less after hospital discharge. This may have represented either a relapse or a reinfection. This latter possibility must be considered in view of the fact that many of the families, including the siblings and parents, were similarly affected with shigellosis. It was sometimes difficult to persuade the remaining members of these families to submit to treatment, despite a demonstrable pathogen in the stool.

Thus, from the results obtained in this study, one can conclude that chloramphenicol, chlortetracycline, oxytetracycline, tetracycline, polymyxin B and streptomycin are all highly effective against *Shigella* organisms, and each drug is capable of producing a prompt cure in patients with bacillary dysentery. At the present writing, no categorical statement can be made as to which of these would be the drug of choice. However, it is of some importance to know that there are now 6 effective therapeutic agents for the treatment of shigellosis, instead of only the sulfonamide drugs. There has been some indication in studies carried on in Korea that a sizable number of strains of *Shigella* have become resistant to sulfonamide drugs. Also one may take cognizance of the relatively higher incidence of shigellosis among military personnel, especially in tropical areas, coupled with the hazard of administering a sulfonamide drug to dehydrated patients. Under these circumstances, the broad-spectrum antibiotics with their greater degree of safety and the absence of any demonstrable resistant strains of *Shigella* organisms should become the drugs of choice in the treatment of this disease.

SALMONELLA ENTERITIS

During the past seven years we have treated 122 cases of *Salmonella* enteritis at Children's Hospital. The results have been somewhat disappointing. All the broad-spectrum antibiotics, including chloramphenicol, oxytetracycline, chlortetracycline, and tetracycline, as well as oral streptomycin, polymyxin B and neomycin were employed either alone or in combination. It may be generally stated that an inhibitory effect on both the *Salmonella* organisms and the normal stool flora was observed during the period of the administration of each drug. However, in approximately 70 per cent of the cases, either the stool remained persistently infected during the course of drug administration, or became free of the pathogen shortly after initiation of therapy only to show a bacteriologic relapse within 3

to 30 days after discontinuation of treatment. It might be added that there was no attendant clinical exacerbation associated with these bacteriologic relapses. There appeared to be no correlation between the strain of *Salmonella* and the incidence of cultural relapses. Similarly there was no demonstrable correlation between the dose or duration of therapy and the results of treatment.

By and large, the various strains of *Salmonella* were sensitive in vitro to all of the antibiotics employed in this study. However, after bacteriologic reversal, the organism showed no demonstrable increase in resistance when compared with the in vitro sensitivity before treatment was started. Thus, except for a transitory elimination from the bowel of the pathogen during the treatment phase and for varying intervals thereafter, none of the antibiotics employed was capable of effecting a permanent cure bacteriologically, except in a relatively small percentage of cases. Of all the drugs used in the present series, it was our impression that a combination of chloramphenicol and oral streptomycin, administered for periods of 10 to 14 days, yielded more consistently favorable results than any other modality of therapy employed.

CLINICOPATHOLOGICAL CONFERENCE

Directed by: E. Clarence Rice, M.D.
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Discussed by: George J. Cohen, M.D.

PROTOCOL

This 8 year old colored female was admitted to Children's Hospital with the chief complaints of intermittent swelling of the joints and intermittent fever for 7 months, chest and precordial pain for 3 months and generalized lymphadenopathy for 1 month. One month prior to admission the child had been discharged from another hospital where the diagnosis of pulmonary tuberculosis was made. At that hospital a strongly positive tuberculin test was found. She had a positive heterophile antibody test, negative serology for syphilis, and blood was observed in the urine. Two weeks prior to admission an erythematous rash appeared on the hands and trunk. This lasted for 24 hours. Two days after the appearance of the rash there developed swelling of the ankles, face, and abdomen and the patient began to cough up blood. There had been no apparent loss of weight or appetite.

Past history and family history: The child was born at home and was

the product of a normal full term gestation and normal delivery. Measles, chicken pox, and whooping cough were the only previous diseases.

The child had had no known contact with a tuberculous person. The mother had received anti-luetic treatment during the previous five years. Two brothers and one sister were all living and well.

Physical examination: This was a well developed, well nourished colored girl appearing ill, but in no distress. There was marked stiffness of the arms and pain in the extremities. The abdomen was distended and the face and lower extremities appeared swollen. The head, ears, and nose were normal. The throat was slightly injected. The chest was resonant but rales were heard over the left base posteriorly. The heart rhythm was regular and no murmurs were heard. There was cardiac enlargement to the left on percussion. The liver was palpable two finger's breadth below the right costal margin and there was moderate ascites. There was pitting edema of the lower extremities. Three weeks after admission a generalized papular urticarial rash was noticed. Four weeks after admission, because of the findings of albumin and red cells in the urine, the child was given a course of sulfathiazole therapy for possible urinary tract infection. Five weeks after admission she began to complain of frontal headaches and ran a fever from 103° to 105°. The blood pressure was 98/70. The abdomen was greatly distended and a paracentesis was done, 750 ml. of bloody fluid being obtained. Two days following this another paracentesis was performed and 1,200 ml. of clear fluid were removed. Four months after admission, because of the persistently positive serological tests for syphilis, a course of bismuth therapy was given. There was no improvement; she gradually became very dyspneic and died 5 months after admission.

Laboratory Data: Urinalysis on admission showed the appearance to be turbid, the reaction alkaline, the specific gravity 1.020, and the albumin 1000 mg. per 100 ml. Red blood cells were seen and persisted throughout the hospital stay. The peripheral blood hemoglobin was 9.5 grams per 100 ml; there were 6,500 leukocytes with segmented forms 64 per cent, bands 4 per cent, lymphocytes 32 per cent. During the hospitalization, the leukocyte count ranged between 6,000 and 15,000. Repeated blood cultures were sterile. Diphtheroids were cultured from the urine twice. Throat culture showed *Staphylococcus albus* and an hemolytic streptococcus; vaginal culture showed no growth. Serum protein was 6.69 grams per 100 ml., cholesterol 143 mg. and chlorides 313 mg. per 100 ml. Non-protein nitrogen ranged between 26 and 57 mg. per 100 ml. Serum agglutinins against *Salmonella typhosa*, *paratyphi* and *schottmülleri*, *Brucella abortus* and *Proteus* OX_{19} were not present. The heterophile agglutination test was negative. Wassermann, Kahn and Mazzini tests on the blood serum were repeatedly positive. A sedimentation rate was 42 mm per hr.

Spinal fluid Wassermann was negative; colloidal gold 222111000. Electrocardiogram showed sinus rhythm with a rate of 105. PR interval was 0.13. There was a low voltage QRS complex and inverted T waves in leads 1, 2 and 3. Repeated electrocardiograms showed a persistent low voltage QRS. Microscopic examination of two lymph nodes and muscle removed at surgery showed generalized lymphoid hyperplasia with a considerable number of eosinophiles. X-ray examination of the chest on admission revealed increased hilar markings with obliteration of the cardio-phrenic angle and some density in the left base. There was considerable increase in fibrosis throughout the lung parenchyma. X-ray examination of the upper and lower extremities was normal. Intravenous pyelogram was normal. A flat film of the abdomen revealed a ground glass appearance indicative of ascites.

Discussion: Dr. George J. Cohen

I think that we can start off with a consideration of heart disease. Numerous possibilities come to mind, and rheumatic fever is one. The rheumatic patients that I have seen have usually had a leukocytosis which this girl did not have. In the beginning she had swelling of the joints and fever for seven months which is a rather long episode for rheumatic fever. Against this diagnosis was the fact that she never had a murmur or prolonged PR interval. Rheumatoid arthritis is another possibility, but I would expect some joint deformity, even after only seven months.

There is a possibility of pulmonary tuberculosis on the basis of the positive tuberculin test, but the chest x-ray is certainly not typical. The positive heterophile and the negative serology which she had at another hospital were reversed here and I am inclined to think that this case could not be either infectious mononucleosis or syphilis. The skin lesions are not those of syphilis. This child is rather old to have the initial manifestations of congenital syphilis, she is rather young for the lesions of acquired syphilis, and her course was too progressive for infectious mononucleosis.

The thing that impressed me most as a diagnostic possibility was a generalized collagen disease, possibly periarteritis nodosa or lupus erythematosus. The symptomatic involvement of so many systems, i.e., the joints, cardiac, urinary, and pulmonary systems, plus rash, fever, hepatomegaly, and edema, could be explained by pathology affecting the blood vessels, such as is seen in collagen disease. There are several things which I would like to have had clarified. We know what the serum protein was, but it would be nice to know the A/G ratio. The involvement of the renal blood vessels in lupus and periarteritis gives us a picture very similar to a glomerulonephritis, with red cells and albumin. Her urine showed such

findings. It is difficult to know whether the edema was on the basis of liver involvement or on the basis of renal loss of albumin with later reversal of the A/G ratio. The rash which came and went would certainly be consistent with one of the collagen vascular diseases, especially disseminated lupus. So far as the lung picture is concerned, with the progressive involvement and fibrosis and dyspnea, I do not remember seeing anything like this, but this type of reaction is standard in collagenoses. So far as the heart findings are concerned they seem to be within the limits of normal, but there is a possibility of myocarditis on the basis of electrocardiogram changes and cardiomegaly, which is typical of the collagen diseases.

Some of the other things which come to mind, which are a little hard to rule in, are the reticuloendothelioses, and possibly leukemia or lymphoma. I would think that the biopsy or examination of the blood or bone marrow smear would either make the diagnosis or rule these possibilities out. It is a bit hard for me to explain the ascites. The liver may be responsible or there may be involvement of the mesentery. The bloody fluid may be present on the basis of mesenteric infiltration or venous thrombosis of the abdominal vessels. It is odd that the fluid was bloody on one occasion and not on the other. Possibly this may have been due to trauma, but periarteritis may also do this. It would have been helpful to have more information than the biopsy report gave us.

My first choice would be one of the collagen diseases.

Autopsy Findings

Enid F. Gilbert, M.D.

At autopsy the body was that of a fairly well nourished and well developed 8 year old female. There was edema of the face, generalized lymphadenopathy and abdominal distension.

On opening the thorax the pericardial cavity contained approximately 20 ml of clear straw-colored fluid. The lung surfaces were mottled light pink and dark red, the right lung weighing 1½ times the normal for a child of this size. The weight of the left lung was normal.

The heart weighed 160 grams (normal 110 grams). The myocardium was red and flabby. On the inferior surface of the tricuspid valve were noted two slightly elevated areas of pinhead size as well as a grayish-yellow vegetation 2 mm. in diameter attached to the papillary muscle of this leaflet. A number of grayish-yellow verrucae were noted on the aortic cusp of the mitral valve. The appearance was similar to Libman-Sachs atypical verrucous endocarditis. The peritoneal cavity contained approximately 400 ml. of cloudy yellow, foul smelling fluid. The peritoneal surfaces of all the viscera were covered by a yellowish purulent exudate.

The liver weighed almost twice the normal for a child of this size. The surface was covered with purulent exudate. On section the surface was firm and brownish red in color, the lobules being prominent.

The spleen weighed 240 grams (four times the normal). There was marked thickening of the capsule. On section the surface was bright red with marked increase in trabeculations.

The serosal surface of the gastro-intestinal tract was covered with purulent exudate. The mesenteric lymph nodes were enlarged and hyperemic.

The right and left kidneys were markedly enlarged, weighing two and three times the normal, respectively. The capsules stripped with slightly increased resistance leaving a smooth gray surface with scattered irregular hemorrhagic areas. On section the cortical substance was pale with many hemorrhagic beefy-looking areas. The medullary substance was also pale.

The gross appearance of the pancreas, adrenals, bladder, and generative organs was unremarkable.

Microscopic examination of the lungs revealed the presence of connective tissue proliferation of the arterioles. The lymph nodes showed prominent reticulum and dilatation of the vascular channels. The blood vessels showed evidence of fibrous tissue proliferation and hyalinization.

The epicardium showed some round cell infiltration and connective tissue proliferation with collagenous degeneration of the epicardium.

The myocardial fibres were separated by proliferation of connective tissue. Some blood vessels showed perivascular round cell infiltration, others were almost occluded by fibrous tissue.

The liver capsule was thickened and infiltrated with round cells and macrophages. There was marked increase in connective tissue around the portal triads with infiltration of round cells and polymorphonuclear cells.

The spleen contained healed tubercles, increased reticulum and areas of fibrosis.

The glomeruli of the kidneys showed hyalinization, fibrosis and obliteration of the normal architecture. The tubular epithelium was swollen and the lumina contained amorphous material.

There was leukocytic infiltration localized especially around the blood vessels. The microscopic appearance of the kidney was that of subacute and chronic glomerulonephritis.

The microscopic and gross findings indicated a pericarditis, myocarditis, and endocarditis of a low grade type. The peritonitis, which was acute, presumably followed the abdominal paracentesis. The vascular changes about the blood vessels in the liver were possibly part of the same process affecting the heart. The marked changes noted in the spleen were believed to be due to a healed tuberculosis involving this organ. The kidneys, together with the heart and spleen, seemed to have borne the brunt

of organic damage. The kidneys were the site of a chronic and subacute diffuse glomerulonephritis, however there was no evidence of "wire loop" lesions in the glomeruli. Throughout practically all of the organs were found evidences of connective tissue degenerative changes which were believed to be compatible with a diagnosis of disseminated lupus erythematosus. The positive serology as well as the positive heterophile agglutination titre are not uncommon findings in disseminated lupus erythematosus.

Final Pathological Diagnosis:

1. Disseminated lupus erythematosus
2. Acute purulent peritonitis
3. Healed tuberculosis of the spleen

EDITORIAL

Genetic Counseling by the Pediatrician

A pediatrician who reads the handbook reviewed in another section of this issue, *Counseling in Medical Genetics*, must necessarily recall problems in genetic counseling he has met in his practice. How easily he has been able to handle these problems may vary with many factors related to himself: his age, his experience, his knowledge of the subject, his emotional reaction to the particular disease, his emotional relationship with the particular family. However, regardless of these personal factors, it seems a logical and primary function of the pediatrician to offer such counseling: (1) he has usually made the diagnosis in the affected child; (2) through other children he frequently has known the family, its social, religious, and emotional background; (3) with his interest in infants and children he should be aware better than anyone else of the physical, mental, emotional, and social prognosis of the disease concerned. If in addition he is familiar with the basic laws of genetics and takes a few moments to consult references concerning the genetics of the disease in question, he is prepared to offer the parents not only genetic counseling but also total family counseling on a broad and sympathetic basis. He must state the facts and their implications (and this often takes the courage of David). Then he must listen; allay unwarranted guilt; answer questions. He cannot make necessary conclusions and decisions but he can advise and guide the parents in making their own decisions. If he is a complete pediatrician, he will accept the responsibility and privilege of offering such counsel.

BOOK REVIEWS

Counseling in Medical Genetics. SHELDON C. REED. Philadelphia and London, W. B. Saunders Company, 1955.

This little book was a wonderful surprise as it came to the editorial desk, for here in brief and simple language were summaries of the basic concepts of genetics and their application to the common clinical problems in the field. What are the probabilities of twinning; the chances of recurrence of mongolism in the same family; and of adrenal hyperplasia? These are among the clinical entities covered in the very refreshing, although sometimes cavalier style of this book.

The book is not a complete coverage of clinical genetics, although there is an excellent reference table of entities not covered in detail. It is a valuable reference for the shelf of any physician offering counsel to growing families.

A Textbook Of Medicine. Edited by RUSSELL L. CECIL and ROBERT F. LOEB. Ninth Edition. Philadelphia, London, W. B. Saunders Company, 1955.

The ninth edition of this traditional textbook should be, as its predecessors, an excellent reference source for certain problems in pediatrics.

Most sections of this text are covered by authorities in a field and the general approach is from etiology through pathologic physiology to clinical symptomatology. There is little or no woolgathering on controversial subjects.

The infectious diseases are excellently covered, with new sections, for example, on Colorado tick fever, Coxsackie virus infections, epidemic hemorrhagic fever and cat scratch disease. In this section some discrepancies apparently stem from the use of separate authors for discussion of such closely related subjects as varicella and herpes zoster; the section on varicella is current on isolation of the agent in tissue culture and its probable identity with zoster whereas the section on herpes zoster omits such reference.

A section on dehydration and fluid balance is thoughtfully presented from the viewpoint mostly of renal and hypothalamic control of homeostasis. No detail is given to fluid or electrolyte use in management of fluid problems in children.

That the book is not intended as a full coverage of pediatrics is attested by the following observations: Hypervitaminosis A is, from the standpoint of the pediatrician, underemphasized by a seeming skepticism in the validity of the entity, now well accepted in pediatric circles. Fibrocystic disease is summarized as an "uncommon malady of childhood" plus about 100 words. On the other hand there are fine discussions of: acute laryngitis, with emphasis on the emergency nature of the disease; lead poisoning, noting the use of versene; cryptorchidism; and of most of the infectious diseases, including pediatric aspects.

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